

Abstract of the Disclosure

A base station having the strongest downlink signal is identified by utilizing a unique slope of a pilot tone hopping sequence being transmitted by a base station. Specifically, base station identification is realized by determining the slope of the strongest received pilot signal, i.e., the received pilot signal having the maximum energy. In an embodiment of the invention, the pilot tone hopping sequence is based on a Latin Squares sequence. With a Latin Squares based pilot tone hopping sequence, all a mobile user unit needs is to locate the frequency of the pilot tones at one time because the pilot tone locations at subsequent times can be determined from the slope of the Latin Squares pilot tone hopping sequence. The slope and initial frequency shift of the pilot tone hopping sequence with the strongest received power is determined by employing a unique maximum energy detector. In one embodiment, the slope and initial frequency shift of the pilot signal having the strongest received power is determined by finding the slope and initial frequency shift of a predicted set of pilot tone locations having the maximum received energy. In another embodiment, the frequency shift of the pilot signal with the strongest, i.e., maximum, received power is estimated at each of times "t". These frequency shifts are employed in accordance with a prescribed relationship to determine the unknown slope and the initial frequency shift of the pilot signal.

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